



FORMATION PRESSURE WORKSHEET

Well No.: 25/11-18T2

Rig : West Vanguard

Date : 05.10.94

Pressure Units : Bar

RKB-MSL : 22m

Witnessed by : Waldum/MJH

Run No. 4A	Depth (MD)	Depth TVD (MSL)	Initial Hydrostatic Press		Formation Pressure		Final Hydrostatic Press		Time		Remarks	
			Strain	QCG	Strain	QCG	Strain	QCG	Set	Retract	Mob.Ratio	Temp.
13	1797.0	1773.6	233.40	232.88	179.22	178.61	233.36	232.88	9:43	9:48		
14	1755.0	1731.6	227.88	227.43	175.34	174.78			10:04			
				2 3/8"	chamber	opened	at	10:05.				
				Shutin	press.	174.65	at	10:19.				
				450cc	chamber	opened	at	10:20				
				Shutin	press.	174.81	at	10:21				
						174.81	227.97	227.53		10:24		



WELL TEST RESULTS		WELL: 25/11-18	
TEST NO. 1		Sampling Flow	High Rate Flow
Perforated Interval (m MD RKB)		815.0 - 865.0	
Choke	(inch)	40/64	128/64
Water rate	(Sm ³ /d)	1 045	3 934
Gas rate	(Sm ³ /d)	1 081	N/A
Gas-liquid ratio (GLR)	(Sm ³ /Sm ³)	1,03	N/A
FBHP	(bar)	76,59	68,35
FBHT	(°C)	33,03	33,16
FWHP	(bar)	52,8	14,3
FWHT	(°C)	29,3	31,3
P _{sep}	(bar)	6,5	N/A
T _{sep}	(°C)	17,5	N/A
Maximum H ₂ S (*)	(ppm)	0,2	0,25
Maximum CO ₂ (*)	(%)	7,5	10
Maximum solids	(%)	0	0
Water density at 20°C	(g/cm ³)	1,03	1,03
Gas gravity	(air=1)	0,63	N/A
k	(mD)	5 796	
Skin		34,5	48,6
PI	(Sm ³ /d/bar)	491	379
P _i	(bar)	78,72	
Gauge depth reference	(m MD RKB)	792,16	

(*) Uncorrected field measurements.

TOTAL CONSUMPTION OF MUD ADDITIVES ON WELL 25/11-18

Section Size	Product/Additive	Total Amount Planned	Total Amount Used	Unit	Difference		Difference in cost	
					Amount	%	%	[kNOK]
36"	ANCOBAR		15000.0	kg				
	BENTONITE		29000.0	kg				
	LIME		240.0	kg				
	SODA ASH		275.0	kg				
24"	ANCOBAR		66000.0	kg				
	BENTONITE		33000.0	kg				
	LIME		340.0	kg				
	SODA ASH		425.0	kg				
17 1/2"	ANCOBAR		16000.0	kg				
	CELPOL LV		1975.0	kg				
	CELPOL REG		4550.0	kg				
	KOPLUS LL		2500.0	l				
	LAMPAC LV		200.0	kg				
	LAMPAC XLO		1875.0	kg				
	RHODOTOL 23		250.0	kg				
8 1/2"	ANCO 208		9971.0	l				
	ANCOBAR		21000.0	kg				
	CELPOL LV		1450.0	kg				
	CELPOL REG		725.0	kg				
	KCL BRINE		220000.0	l				
	KCL POWDER		6325.0	kg				
	LAMPAC LV		1000.0	kg				
	RHODOTOL 23		250.0	kg				
	SHALETROL		300.0	kg				
SODA ASH		50.0	kg					
6"	ANCOBAR		97000.0	kg				
	CITRIC ACID		25.0	kg				
	KCL BRINE		370000.0	l				
	KCL POWDER		3675.0	kg				
	LAMPAC LV		4025.0	kg				
	LAMPAC XLO		650.0	kg				
RHODOTOL 23		1150.0	kg					

TOTAL CONSUMPTION OF MUD ADDITIVES ON WELL 25/11-18

Section Size	Product/Additive	Total	Total	Unit	Difference		Difference in cost	
		Amount Planned	Amount Used		Amount	%	%	[kNOK]
6"	SHALETROL		2775.0	kg				
	SODA ASH		925.0	kg				
	SODIUM BICARBONATE		1225.0	kg				
4 1/8"	ANCOBAR		184000.0	kg				
	AQUAMUL B-2		7500.0	l				
	AQUAMUL M		205.0	l				
	AQUAMUL P		800.0	l				
	AQUAMUL S		600.0	l				
	AQUAMUL VIS-2		400.0	l				
	CACO3 / CALSIUM CARBONATE		12100.0	kg				
	CELPOL REG		1200.0	kg				
	CaCl2 / CALSIUM CHLORIDE		6300.0	kg				
	LIME		220.0	kg				
RHODOTOL 23		1625.0	kg					
SODIUM BICARBONATE		1100.0	kg					

Norsk Hydro

DAILY MUD PROPERTIES : RHEOLOGY PARAMETERS FOR WELL 25/11-18

Hole section:

WATER BASED SYSTEM

Date	Depth		Mud Type	Funnel	Dens	Mudtmp	Fann Readings						Rheo	PV	YP	Gel0	Gel10		
	[m]			Visc		Out							Test						
	MD	TVD		[sec]	[sg]	[DegC]	600	300	200	100	60	30	6	3	[DegC]	[mPas]	[Pa]	[Pa]	[Pa]
09-aug-1994 23:59	0	0	SPUD MUD	150.0	1.05	0.0									0.0	0.0	0.0	0.0	0.0

Hole section: 36"

WATER BASED SYSTEM

Date	Depth		Mud Type	Funnel	Dens	Mudtmp	Fann Readings						Rheo	PV	YP	Gel0	Gel10		
	[m]			Visc		Out							Test						
	MD	TVD		[sec]	[sg]	[DegC]	600	300	200	100	60	30	6	3	[DegC]	[mPas]	[Pa]	[Pa]	[Pa]
10-aug-1994 23:59	0	0	SPUD MUD	150.0	1.05	0.0									0.0	0.0	0.0	0.0	0.0

Hole section: 24"

WATER BASED SYSTEM

Date	Depth		Mud Type	Funnel	Dens	Mudtmp	Fann Readings						Rheo	PV	YP	Gel0	Gel10		
	[m]			Visc		Out							Test						
	MD	TVD		[sec]	[sg]	[DegC]	600	300	200	100	60	30	6	3	[DegC]	[mPas]	[Pa]	[Pa]	[Pa]
11-aug-1994 23:59	0	0	SPUD MUD	150.0	1.05	0.0									0.0	0.0	0.0	0.0	0.0
12-aug-1994 23:59	0	0	SPUD MUD	150.0	1.05	0.0									0.0	0.0	0.0	0.0	0.0
13-aug-1994 23:59	0	0	SPUD MUD	150.0	1.05	0.0									0.0	0.0	0.0	0.0	0.0
14-aug-1994 23:59	0	0	SPUD MUD	150.0	1.05	0.0									0.0	0.0	0.0	0.0	0.0

Hole section: 17 1/2"

WATER BASED SYSTEM

Date	Depth		Mud Type	Funnel	Dens	Mudtmp	Fann Readings						Rheo	PV	YP	Gel0	Gel10	
	[m]			Visc		Out							Test					
	MD	TVD		[sec]	[sg]	[DegC]	600	300	200	100	60	30	6	3	[DegC]	[mPas]	[Pa]	[Pa]
15-aug-1994 23:59	563	563	POLYMER MU	77.0	1.03	0.0	68	52	44	32		11	6	50.0	16.0	18.0	6.0	6.0
16-aug-1994 23:59	1180	1180	POLYMER MU	78.0	1.10	0.0	63	46	38	27		7	5	50.0	17.0	14.5	2.5	3.0
17-aug-1994 23:59	1180	1180	POLYMER MU	86.0	1.10	0.0	86	61	52	39		10	8	50.0	25.0	18.0	4.0	9.0

See also the report 'DAILY MUD PROPERTIES : OTHER PARAMETERS'

Norsk Hydro

DAILY MUD PROPERTIES : RHEOLOGY PARAMETERS FOR WELL 25/11-18

Hole section: 17 1/2" WATER BASED SYSTEM

Date	Depth		Mud Type	Funnel	Dens	Mudtmp	Fann Readings						Rheo	PV	YP	Gel10	Gel10		
	[m]			Visc		Out	600	300	200	100	60	30	6	3	Test				
	MD	TVD		[sec]	[sg]	[DegC]								[DegC]	[mPas]	[Pa]	[Pa]	[Pa]	
18-aug-1994 23:59	1180	1180	POLYMER MU	52.0	1.06	0.0	40	24	18	12			2	1	50.0	16.0	4.0	0.5	2.0

Hole section: 8 1/2" WATER BASED SYSTEM

Date	Depth		Mud Type	Funnel	Dens	Mudtmp	Fann Readings						Rheo	PV	YP	Gel10	Gel10		
	[m]			Visc		Out	600	300	200	100	60	30	6	3	Test				
	MD	TVD		[sec]	[sg]	[DegC]								[DegC]	[mPas]	[Pa]	[Pa]	[Pa]	
19-aug-1994 23:59	1183	1183	ANCO 2000	72.0	1.14	0.0	74	49	39	24			4	3	50.0	25.0	12.0	1.5	2.0
20-aug-1994 23:59	1688	1688	ANCO 2000	76.0	1.20	0.0	70	49	40	26			7	5	50.0	21.0	14.0	2.5	4.0
21-aug-1994 23:59	1688	1688	ANCO 2000	78.0	1.20	0.0	68	48	38	25			7	5	50.0	20.0	14.0	2.5	4.0
22-aug-1994 23:59	1688	1688	ANCO 2000	82.0	1.28	0.0	79	55	44	29			7	5	50.0	24.0	15.5	3.0	3.5
23-aug-1994 23:59	1688	1688	ANCO 2000	82.0	1.28	0.0	79	55	44	29			7	5	50.0	24.0	15.5	3.0	3.5

Hole section: 4 1/8" WATER BASED SYSTEM

Date	Depth		Mud Type	Funnel	Dens	Mudtmp	Fann Readings						Rheo	PV	YP	Gel10	Gel10		
	[m]			Visc		Out	600	300	200	100	60	30	6	3	Test				
	MD	TVD		[sec]	[sg]	[DegC]								[DegC]	[mPas]	[Pa]	[Pa]	[Pa]	
24-aug-1994 23:59	1688	1688	ANCO 2000	82.0	1.28	0.0	79	55	44	29			7	5	50.0	24.0	15.5	3.0	3.5

Hole section: 4 1/8" ALTERNATIVE BASED SYSTEM

Date	Depth		Mud Type	Funnel	Dens	Mudtmp	Fann Readings						Rheo	PV	YP	Gel10	Gel10		
	[m]			Visc		Out	600	300	200	100	60	30	6	3	Test				
	MD	TVD		[sec]	[sg]	[DegC]								[DegC]	[mPas]	[Pa]	[Pa]	[Pa]	
25-aug-1994 18:00	1699	1699	AQUAMUL	97.0	1.04	0.0	61	33	24	14			4	3	50.0	28.0	2.5	2.0	3.0
26-aug-1994 18:00	1699	1699	AQUAMUL	97.0	1.04	0.0	51	28	20	12			4	3	50.0	23.0	2.5	3.0	4.0

See also the report 'DAILY MUD PROPERTIES : OTHER PARAMETERS'

Norsk Hydro

DAILY MUD PROPERTIES : RHEOLOGY PARAMETERS FOR WELL 25/11-18

Date		Depth		Mud Type	Funnel	Dens	Mudtmp	Fann Readings						Rheo	PV	YP	Gel0	Gel10		
		[m]			Visc		Out						Test							
		MD	TVD		[sec]	[sg]	[DegC]	600	300	200	100	60	30	6	3	[DegC]	[mPas]	[Pa]	[Pa]	[Pa]
27-aug-1994	22:00	1702	1702	AQUAMUL	97.0	1.04	0.0	50	27	20	12			4	3	50.0	23.0	2.0	2.0	2.5
28-aug-1994	22:00	1702	1702	AQUAMUL	86.0	1.04	0.0	54	30	22	13			2	2	50.0	24.0	3.0	1.5	2.5
29-aug-1994	23:59	1702	1702	AQUAMUL	98.0	1.04	0.0	54	30	22	14			3	2	50.0	24.0	3.0	1.5	2.5
30-aug-1994	23:59	1702	1702	AQUAMUL	92.0	1.04	0.0	52	28	21	12			3	2	50.0	24.0	2.0	1.5	2.5
31-aug-1994	23:59	1711	1711	AQUAMUL	92.0	1.04	0.0	55	30	22	13			3	2	50.0	25.0	2.5	1.5	2.5
01-sep-1994	23:59	1711	1711	AQUAMUL	92.0	1.04	0.0	55	31	23	13			3	2	50.0	24.0	3.5	1.5	2.5
02-sep-1994	23:59	1711	1711	AQUAMUL	95.0	1.08	0.0	57	32	23	13			3	2	50.0	25.0	3.5	1.5	2.5
03-sep-1994	22:00	1711	1711	AQUAMUL	90.0	1.08	0.0	62	34	24	15			3	2	50.0	28.0	3.0	1.5	2.5
04-sep-1994	22:00	1720	1720	AQUAMUL	90.0	1.08	0.0	64	36	25	15			3	2	50.0	28.0	4.0	1.5	2.5
05-sep-1994	22:00	1720	1720	AQUAMUL	90.0	1.08	0.0	64	36	25	15			3	2	50.0	24.0	3.5	1.5	1.5
06-sep-1994	22:00	1720	1720	AQUAMUL	90.0	1.08	0.0	55	31	23	13			2	2	50.0	24.0	3.5	1.5	2.0
07-sep-1994	22:00	1732	1732	AQUAMUL	90.0	1.08	0.0	55	31	23	13			2	2	50.0	24.0	3.5	1.5	2.0
08-sep-1994	22:00	1732	1732	AQUAMUL	90.0	1.08	0.0	55	31	23	13			2	2	50.0	24.0	3.5	1.5	2.0
09-sep-1994	23:59	1732	1732	AQUAMUL	90.0	1.08	0.0	55	31	23	13			2	2	50.0	24.0	3.5	1.5	2.0
10-sep-1994	23:59	1732	1732	AQUAMUL	93.0	1.08	0.0	65	36	26	15			3	2	50.0	29.0	3.5	1.5	2.5
11-sep-1994	23:59	1732	1732	AQUAMUL	95.0	1.08	0.0	59	31	24	14			3	2	50.0	26.0	3.5	1.5	2.5
12-sep-1994	23:59	1752	1752	AQUAMUL	97.0	1.08	0.0	64	36	26	15			3	2	50.0	28.0	4.0	1.5	2.5
13-sep-1994	23:59	1778	1778	AQUAMUL	97.0	1.08	0.0	63	35	24	14			3	2	50.0	28.0	3.5	1.5	2.5
14-sep-1994	23:59	1796	1796	AQUAMUL	96.0	1.10	0.0	62	34	24	14			3	2	50.0	28.0	3.0	1.5	2.5
15-sep-1994	23:59	1860	1860	AQUAMUL	96.0	1.10	0.0	64	35	25	15			3	2	50.0	29.0	3.0	1.5	2.5
16-sep-1994	23:59	1860	1860	AQUAMUL	109.0	1.25	0.0	83	45	32	18			4	3	50.0	38.0	3.5	2.0	3.0
17-sep-1994	23:59	1860	1860	AQUAMUL	117.0	1.30	0.0	100	54	39	23			4	3	50.0	46.0	4.0	2.0	3.0
18-sep-1994	23:59	1860	1860	AQUAMUL	165.0	1.35	0.0	128	78	60	41			13	10	50.0	50.0	14.0	7.0	14.0
19-sep-1994	23:59	1860	1860	AQUAMUL	165.0	1.35	0.0	128	78	60	41			13	10	50.0	50.0	14.0	7.0	14.0

See also the report 'DAILY MUD PROPERTIES : OTHER PARAMETERS'

Norsk Hydro

DAILY MUD PROPERTIES : RHEOLOGY PARAMETERS FOR WELL 25/11-18

Hole section: 4 1/8" WATER BASED SYSTEM

Date	Depth [m]	Mud Type	Funnel Visc [sec]	Dens [sg]	Mudtmp Out [DegC]	Fann Readings				Rheo Test [DegC]	PV [mPas]	YP [Pa]	Gel0 [Pa]	Gel10 [Pa]		
20-sep-1994 23:59	1585 1585	ANCO 2000	71.0	1.28	0.0	63	46	38	27	7	5	50.0	17.0	14.5	2.5	3.0
21-sep-1994 21:00	1585 1585	ANCO 2000	225.0	1.28	0.0	101	78	53	46	24	19	50.0	23.0	27.5	9.5	14.0

Hole section: 6" WATER BASED SYSTEM

Date	Depth [m]	Mud Type	Funnel Visc [sec]	Dens [sg]	Mudtmp Out [DegC]	Fann Readings				Rheo Test [DegC]	PV [mPas]	YP [Pa]	Gel0 [Pa]	Gel10 [Pa]		
22-sep-1994 23:59	1585 1585	ANCO 2000	250.0	1.28	0.0	144	122	112	91	43	35	50.0	22.0	50.0	17.5	22.0
23-sep-1994 23:59	1585 1585	ANCO 2000	285.0	1.28	0.0	138	116	98	79	40	35	50.0	22.0	47.0	17.0	28.0
24-sep-1994 23:59	1585 1585	ANCO 2000	290.0	1.28	0.0	139	118	100	81	42	36	50.0	21.0	48.5	19.0	30.0
25-sep-1994 23:59	1585 1585	ANCO 2000	286.0	1.28	0.0	137	117	96	80	39	33	50.0	20.0	48.5	18.0	29.0
26-sep-1994 23:59	1585 1585	ANCO 2000	297.0	1.28	0.0	135	117	94	79	39	32	50.0	18.0	49.5	18.0	30.0
27-sep-1994 23:59	1585 1585	ANCO 2000	230.0	1.28	0.0	130	109	85	69	35	27	50.0	21.0	44.0	14.5	21.0
28-sep-1994 23:59	1290 1290	ANCO 2000	340.0	1.28	0.0	142	119	94	72	42	35	50.0	23.0	48.0	18.0	28.0
29-sep-1994 23:59	1385 1385	KCL/POLYME	69.0	1.30	0.0	90	63	48	31	5	3	50.0	27.0	18.0	1.5	2.0
30-sep-1994 23:59	1494 1493	KCL/POLYME	99.0	1.30	0.0	90	60	45	29	5	3	50.0	30.0	15.0	1.5	2.0
01-oct-1994 23:59	1712 1711	KCL/POLYME	141.0	1.30	0.0	94	63	49	32	8	6	50.0	31.0	16.0	3.0	4.0
02-oct-1994 23:59	1733 1732	KCL/POLYME	136.0	1.30	0.0	103	68	53	36	8	6	50.0	35.0	16.5	3.0	3.5
03-oct-1994 23:59	1819 1818	KCL/POLYME	136.0	1.30	0.0	103	68	53	36	8	6	50.0	35.0	16.5	3.0	3.5
04-oct-1994 23:59	1875 1874	KCL/POLYME	131.0	1.30	0.0	107	72	38	28	8	6	50.0	35.0	18.5	3.5	4.5
05-oct-1994 23:59	1875 1874	KCL/POLYME	136.0	1.30	0.0	109	73	38	29	8	6	50.0	36.0	18.5	3.5	4.5
06-oct-1994 23:59	1250 1250	KCL/POLYME	112.0	1.30	0.0	91	64	32	22	7	5	50.0	27.0	18.5	3.5	5.0
07-oct-1994 23:59	1207 1207	KCL/POLYME	113.0	1.30	0.0	92	64	33	21	7	5	50.0	28.0	18.0	3.0	5.5
08-oct-1994 21:30	1207 1207	KCL/POLYME	113.0	1.30	0.0	92	64	33	21	7	5	50.0	28.0	18.0	3.0	5.5
08-oct-1994 23:59	1028 1028	KCL BRINE	0.0	1.05	0.0							0.0	0.0	0.0	0.0	0.0
09-oct-1994 23:59	0	KCL BRINE	0.0	1.05	0.0							0.0	0.0	0.0	0.0	0.0
10-oct-1994 23:30	0	KCL BRINE	0.0	1.05	0.0							0.0	0.0	0.0	0.0	0.0

See also the report 'DAILY MUD PROPERTIES : OTHER PARAMETERS'

DAILY MUD PROPERTIES : OTHER PARAMETERS FOR WELL 25/11-18

Hole section:

WATER BASED SYSTEM

Date	Depth [m]	Mud Type	Dens [sg]	Filtrate [ml]	Filt.cake [mm]	HPHT [psi/DegC]	pH	Alcalinity			Inhib [Kg/m3]	K+	CL-	Ca++	Mg++	Tot [mg]	Percentage				CEC [Kg/m3]	ASG [sg]	LGS [Kg/m3]
								Pm	Pf	Mf							hard	Solid	Oil	Sand			
09-aug-1994 23:59	0	0	SPUD MUD	1.05	0.0	0.0	0	0.0	0.0	0.0	0.0	0	0	0	0	0	0.0	0.0	0.0	0.0	0	0.0	0

Hole section: 36*

WATER BASED SYSTEM

Date	Depth [m]	Mud Type	Dens [sg]	Filtrate [ml]	Filt.cake [mm]	HPHT [psi/DegC]	pH	Alcalinity			Inhib [Kg/m3]	K+	CL-	Ca++	Mg++	Tot [mg]	Percentage				CEC [Kg/m3]	ASG [sg]	LGS [Kg/m3]
								Pm	Pf	Mf							hard	Solid	Oil	Sand			
10-aug-1994 23:59	0	0	SPUD MUD	1.05	0.0	0.0	0	0.0	0.0	0.0	0.0	0	0	0	0	0	0.0	0.0	0.0	0.0	0	0.0	0

Hole section: 24*

WATER BASED SYSTEM

Date	Depth [m]	Mud Type	Dens [sg]	Filtrate [ml]	Filt.cake [mm]	HPHT [psi/DegC]	pH	Alcalinity			Inhib [Kg/m3]	K+	CL-	Ca++	Mg++	Tot [mg]	Percentage				CEC [Kg/m3]	ASG [sg]	LGS [Kg/m3]
								Pm	Pf	Mf							hard	Solid	Oil	Sand			
11-aug-1994 23:59	0	0	SPUD MUD	1.05	0.0	0.0	0	0.0	0.0	0.0	0.0	0	0	0	0	0	0.0	0.0	0.0	0.0	0	0.0	0
12-aug-1994 23:59	0	0	SPUD MUD	1.05	0.0	0.0	0	0.0	0.0	0.0	0.0	0	0	0	0	0	0.0	0.0	0.0	0.0	0	0.0	0
13-aug-1994 23:59	0	0	SPUD MUD	1.05	0.0	0.0	0	0.0	0.0	0.0	0.0	0	0	0	0	0	0.0	0.0	0.0	0.0	0	0.0	0
14-aug-1994 23:59	0	0	SPUD MUD	1.05	0.0	0.0	0	0.0	0.0	0.0	0.0	0	0	0	0	0	0.0	0.0	0.0	0.0	0	0.0	0

Hole section: 17 1/2*

WATER BASED SYSTEM

Date	Depth [m]	Mud Type	Dens [sg]	Filtrate [ml]	Filt.cake [mm]	HPHT [psi/DegC]	pH	Alcalinity			Inhib [Kg/m3]	K+	CL-	Ca++	Mg++	Tot [mg]	Percentage				CEC [Kg/m3]	ASG [sg]	LGS [Kg/m3]
								Pm	Pf	Mf							hard	Solid	Oil	Sand			
15-aug-1994 23:59	563	563	POLYMER MU	1.03	8.0	0.0	0	8.5	0.0	0.0	0.0	0	0	9000	1040	0	1200	2.0	0.0	0.0	0	0.0	27
16-aug-1994 23:59	1180	1180	POLYMER MU	1.10	3.8	0.0	1	8.2	0.0	0.0	0.4	0	0	19000	480	0	2240	6.4	0.0	3.5	20	0.0	123
17-aug-1994 23:59	1180	1180	POLYMER MU	1.10	3.7	0.0	1	8.2	0.0	0.0	0.4	0	0	19000	480	0	2240	6.4	0.0	3.0	25	0.0	123
18-aug-1994 23:59	1180	1180	POLYMER MU	1.06	6.8	0.0	1	8.2	0.0	0.0	0.4	0	0	19500	520	0	2280	3.8	0.0	3.0	15	0.0	51

Hole section: 8 1/2*

WATER BASED SYSTEM

Date	Depth [m]	Mud Type	Dens [sg]	Filtrate [ml]	Filt.cake [mm]	HPHT [psi/DegC]	pH	Alcalinity			Inhib [Kg/m3]	K+	CL-	Ca++	Mg++	Tot [mg]	Percentage				CEC [Kg/m3]	ASG [sg]	LGS [Kg/m3]		
								Pm	Pf	Mf							hard	Solid	Oil	Sand					
19-aug-1994 23:59	1183	1183	ANCO 2000	1.14	3.5	8.5	1	21	35/110	9.1	0.0	0.0	0.8	136	171128	76000	440	0	480	8.5	0.0	0.2	15	0.0	34
20-aug-1994 23:59	1688	1688	ANCO 2000	1.20	3.5	13.8	1	21	35/110	9.1	0.0	0.0	1.2	126	165898	70000	1120	0	1800	11.0	0.0	0.2	28	0.0	87
21-aug-1994 23:59	1688	1688	ANCO 2000	1.20	3.3	13.4	1	21	35/110	9.0	0.0	0.0	1.2	126	165852	70000	1140	0	1840	11.0	0.0	0.2	28	0.0	87
22-aug-1994 23:59	1688	1688	ANCO 2000	1.28	2.7	13.0	1	21	35/110	8.5	0.0	0.0	1.2	122	163806	71000	1140	0	1840	13.5	0.0	0.2	28	0.0	89
23-aug-1994 23:59	1688	1688	ANCO 2000	1.28	2.7	13.0	1	21	35/110	8.5	0.0	0.0	1.2	122	163806	71000	1140	0	1840	13.5	0.0	0.2	35	0.0	89

See also the report 'DAILY MUD PROPERTIES : RHEOLOGY PARAMETERS'

DAILY MUD PROPERTIES : OTHER PARAMETERS FOR WELL 25/11-18

Hole section: 4 1/8"

WATER BASED SYSTEM

Date	Depth [m]	Mud Type	Dens [sg]	Filtrate [ml]	Filt.cake [mm]		HPHT [psi/DegC]	pH	Alcalinity			Inhib [Chem]	K+	CL-	Ca++	Mg++	Tot [mg]	Percentage			CEC [Kg/m3]	ASG [sg]	LGS [Kg/m3]	
					API [mm]	HPHT [mm]			Pm [ml]	Pf [ml]	Mf [ml]							hard [%]	Solid [%]	Oil [%]				Sand [%]
24-aug-1994	23:59	1688 1688 ANCO 2000	1.28	2.7	13.0	1	2	35/110	8.5	0.0	0.0	1.2	122	63806	71000	1140	0	1840	13.5	0.0	0.2	35	0.0	89

Hole section: 4 1/8"

ALTERNATIVE BASED SYSTEM

Date	Depth [m]	Mud Type	Dens [sg]	Filtrate [ml]	Filt.cake [mm]		HPHT [psi/DegC]	Electrical [V]	Alcalinity [ml]	CaCl2 [mg/l]	Base/Wat Ratio	Percentage			ASG [sg]	LGS [Kg/m3]
					HPHT [psi/DegC]	Stability [V]						Pm [ml]	Oil [%]	Sand [%]		
25-aug-1994	18:00	1699 1699 AQUAMUL	1.04	19.0	0	2	50/70	210	3.2	311	60/40	0.0	58.0	0.0	0.0	6
26-aug-1994	18:00	1699 1699 AQUAMUL	1.04	19.0	2	2	50/70	210	3.2	311	60/40	3.0	58.0	0.0	0.0	6
27-aug-1994	22:00	1702 1702 AQUAMUL	1.04	18.0	2	2	50/70	220	3.2	319	60/40	3.0	58.0	0.0	0.0	6
28-aug-1994	22:00	1702 1702 AQUAMUL	1.04	17.5	2	2	50/70	210	3.9	289	59/41	3.5	57.0	0.0	0.0	6
29-aug-1994	23:59	1702 1702 AQUAMUL	1.04	17.5	2	2	50/70	200	3.9	314	60/40	4.0	58.0	0.0	0.0	6
30-aug-1994	23:59	1702 1702 AQUAMUL	1.04	17.5	2	2	50/70	220	3.9	316	60/40	4.0	58.0	0.0	0.0	6
31-aug-1994	23:59	1711 1711 AQUAMUL	1.04	17.5	2	2	50/70	200	4.2	289	59/41	3.0	57.0	0.0	0.0	6
01-sep-1994	23:59	1711 1711 AQUAMUL	1.04	17.0	2	2	50/70	210	4.1	282	57/43	4.0	55.0	0.0	0.0	6
02-sep-1994	23:59	1711 1711 AQUAMUL	1.08	17.0	2	2	50/70	210	4.0	302	57/43	4.0	55.0	0.0	0.0	6
03-sep-1994	22:00	1711 1711 AQUAMUL	1.08	17.5	2	2	50/70	260	3.9	444	56/44	3.0	54.0	0.0	0.0	0
04-sep-1994	22:00	1720 1720 AQUAMUL	1.08	17.5	2	2	50/70	260	3.9	460	56/44	4.0	54.0	0.0	0.0	0
05-sep-1994	22:00	1720 1720 AQUAMUL	1.08	17.5	0	0	50/70	260	3.9	460	57/43	3.5	55.0	0.0	0.0	0
06-sep-1994	22:00	1720 1720 AQUAMUL	1.08	17.5	0	0	50/70	260	3.9	460	57/43	3.5	55.0	0.0	0.0	0
07-sep-1994	22:00	1732 1732 AQUAMUL	1.08	16.0	0	0	50/70	200	3.5	382	56/44	6.8	52.3	0.0	0.0	52
08-sep-1994	22:00	1732 1732 AQUAMUL	1.08	16.0	2	2	500/120	200	3.5	382	56/44	6.8	52.3	0.0	2.7	43
09-sep-1994	23:59	1732 1732 AQUAMUL	1.08	16.0	2	2	500/120	200	3.5	382	56/44	6.8	52.3	0.0	2.7	43
10-sep-1994	23:59	1732 1732 AQUAMUL	1.08	15.0	2	2	500/120	280	3.5	320	53/47	6.7	49.4	0.0	2.7	43
11-sep-1994	23:59	1732 1732 AQUAMUL	1.08	15.0	2	2	500/120	300	3.5	317	55/45	6.9	51.1	0.0	2.7	51
12-sep-1994	23:59	1752 1752 AQUAMUL	1.08	15.0	2	2	500/120	320	3.5	317	55/45	6.9	51.1	0.0	2.7	51
13-sep-1994	23:59	1778 1778 AQUAMUL	1.08	15.0	2	2	500/120	410	3.5	324	54/46	6.8	50.2	0.0	2.6	74
14-sep-1994	23:59	1796 1796 AQUAMUL	1.10	15.0	2	2	500/120	380	3.5	342	53/47	7.2	49.8	0.0	2.7	60
15-sep-1994	23:59	1860 1860 AQUAMUL	1.10	15.0	2	2	500/120	420	3.5	328	53/47	7.8	49.2	0.0	2.7	64
16-sep-1994	23:59	1860 1860 AQUAMUL	1.25	15.0	2	2	500/120	440	3.3	347	53/47	12.1	46.9	0.0	3.6	87
17-sep-1994	23:59	1860 1860 AQUAMUL	1.30	10.0	2	2	500/120	440	2.8	340	53/47	13.2	45.8	0.0	3.8	67
18-sep-1994	23:59	1860 1860 AQUAMUL	1.35	10.0	2	2	500/120	360	2.5	340	53/47	15.0	45.0	0.0	3.8	82
19-sep-1994	23:59	1860 1860 AQUAMUL	1.35	10.0	2	2	500/120	360	2.5	340	53/47	15.0	45.0	0.0	3.8	82

Hole section: 4 1/8"

WATER BASED SYSTEM

Date	Depth [m]	Mud Type	Dens [sg]	Filtrate [ml]	Filt.cake [mm]		HPHT [psi/DegC]	pH	Alcalinity			Inhib [Chem]	K+	CL-	Ca++	Mg++	Tot [mg]	Percentage			CEC [Kg/m3]	ASG [sg]	LGS [Kg/m3]	
					API [mm]	HPHT [mm]			Pm [ml]	Pf [ml]	Mf [ml]							hard [%]	Solid [%]	Oil [%]				Sand [%]
20-sep-1994	23:59	1585 1585 ANCO 2000	1.28	7.0	0.0	2	0	0/0	10.5	0.0	0.2	1.4	55	128765	61000	3100	0	3200	12.5	0.0	0.5	11	0.0	60
21-sep-1994	21:00	1585 1585 ANCO 2000	1.28	5.2	0.0	1	0	0/0	8.3	0.0	0.0	0.8	52	127196	55000	2800	0	3120	12.5	0.0	0.5	11	0.0	74

See also the report 'DAILY MUD PROPERTIES : RHEOLOGY PARAMETERS'

Norsk Hydro

DAILY MUD PROPERTIES : OTHER PARAMETERS FOR WELL 25/11-18

Hole section: 4 1/8" WATER BASED SYSTEM

Date	Depth [m]	Mud Type	Dens [sg]	Filtrate [ml]	Filt.cake [mm]	HPHT [psi/DegC]	pH	Alcalinity [ml]	Inhib [Kg/m3]	K+ [mg/l]	CL- [mg/l]	Ca++ [mg/l]	Mg++ [mg/l]	Tot [mg]	Percentage [%]	CEC [Kg/m3]	ASG [sg]	LGS [Kg/m3]
	MD TVD			API	HPHT API	HPHT Press/Temp		Pm Pf Mf	Chem					hard Solid Oil Sand				

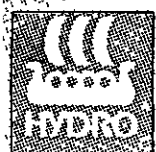
Hole section: 6" WATER BASED SYSTEM

Date	Depth [m]	Mud Type	Dens [sg]	Filtrate [ml]	Filt.cake [mm]	HPHT [psi/DegC]	pH	Alcalinity [ml]	Inhib [Kg/m3]	K+ [mg/l]	CL- [mg/l]	Ca++ [mg/l]	Mg++ [mg/l]	Tot [mg]	Percentage [%]	CEC [Kg/m3]	ASG [sg]	LGS [Kg/m3]	
	MD TVD			API	HPHT API	HPHT Press/Temp		Pm Pf Mf	Chem					hard Solid Oil Sand					
22-sep-1994	23:59	1585 1585 ANCO 2000	1.28	2.0	0.0	0/0	8.0	0.0 0.0 0.8	42	21966	45000	2580	0	2940 12.5	0.0	0.5	13	0.0	97
23-sep-1994	23:59	1585 1585 ANCO 2000	1.28	2.0	0.0	0/0	11.2	0.0 0.6 1.7	38	19874	43000	2580	0	2940 12.8	0.0	0.8	15	0.0	118
24-sep-1994	23:59	1585 1585 ANCO 2000	1.28	1.8	0.0	0/0	10.4	0.0 0.4 1.5	38	19874	42000	2560	0	2860 12.6	0.0	0.6	14	0.0	109
25-sep-1994	23:59	1585 1585 ANCO 2000	1.28	1.8	0.0	0/0	10.3	0.0 0.4 1.6	38	19874	42000	2560	0	2860 12.6	0.0	0.6	14	0.0	109
26-sep-1994	23:59	1585 1585 ANCO 2000	1.28	2.0	0.0	0/0	10.2	0.0 0.4 1.6	39	20397	43000	2520	0	2840 12.6	0.0	0.6	14	0.0	107
27-sep-1994	23:59	1585 1585 ANCO 2000	1.28	2.0	0.0	0/0	10.3	0.0 0.4 1.6	38	19874	42000	2500	0	2830 12.5	0.0	0.6	14	0.0	104
28-sep-1994	23:59	1290 1290 ANCO 2000	1.28	2.4	0.0	0/0	11.8	0.0 0.9 3.2	35	18305	38000	2760	0	2980 12.8	0.0	0.7	16	0.0	128
29-sep-1994	23:59	1385 1385 KCL/POLYME	1.30	2.4	10.8	34/100	9.4	0.0 0.0 1.4	107	55961	79000	300	0	420 15.0	0.0	0.5	14	0.0	12
30-sep-1994	23:59	1494 1493 KCL/POLYME	1.30	2.4	11.8	34/100	8.3	0.0 0.0 0.8	105	54915	68000	900	0	1220 12.8	0.0	0.5	17	0.0	26
01-oct-1994	23:59	1712 1711 KCL/POLYME	1.30	2.7	11.0	34/100	7.8	0.0 0.0 0.8	105	54915	69000	1120	0	1300 13.0	0.0	0.5	18	0.0	9
02-oct-1994	23:59	1733 1732 KCL/POLYME	1.30	2.3	11.8	34/100	9.1	0.0 0.0 0.4	112	58576	79000	960	0	1120 13.0	0.0	0.2	20	0.0	6
03-oct-1994	23:59	1819 1818 KCL/POLYME	1.30	2.3	12.0	34/100	9.5	0.0 0.2 0.9	111	58053	80000	700	0	860 13.0	0.0	0.5	19	0.0	6
04-oct-1994	23:59	1875 1874 KCL/POLYME	1.30	2.5	12.8	34/100	9.3	0.0 0.2 1.1	106	55438	77000	860	0	960 13.0	0.0	0.5	19	0.0	14
05-oct-1994	23:59	1875 1874 KCL/POLYME	1.30	2.4	12.6	34/100	9.3	0.0 0.2 1.2	106	55438	77000	900	0	1020 13.0	0.0	0.5	19	0.0	7
06-oct-1994	23:59	1250 1250 KCL/POLYME	1.30	2.7	13.4	34/100	9.8	0.0 0.6 2.2	102	55346	72000	1120	0	1060 13.0	0.0	0.5	17	0.0	27
07-oct-1994	23:59	1207 1207 KCL/POLYME	1.30	3.4	0.0	0/0	10.2	0.0 0.8 2.2	100	52300	74000	1240	0	1360 13.0	0.0	0.5	16	0.0	22
08-oct-1994	21:30	1207 1207 KCL/POLYME	1.30	2.8	0.0	0/0	8.7	0.0 0.1 0.8	124	65000	81000	1240	0	0 13.0	0.0	0.5	0	0.0	22
08-oct-1994	23:59	1028 1028 KCL BRINE	1.05	0.0	0.0	0/0	0.0	0.0 0.0 0.0	0	0	0	0	0	0 0.0	0.0	0.0	0	0.0	0
09-oct-1994	23:59	0 0 KCL BRINE	1.05	0.0	0.0	0/0	0.0	0.0 0.0 0.0	0	0	0	0	0	0 0.0	0.0	0.0	0	0.0	0
10-oct-1994	23:30	0 0 KCL BRINE	1.05	0.0	0.0	0/0	0.0	0.0 0.0 0.0	0	0	0	0	0	0 0.0	0.0	0.0	0	0.0	0

See also the report 'DAILY MUD PROPERTIES : RHEOLOGY PARAMETERS'

Reservoir geochemistry Hermod.

Volume 1 of 2



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Appendix 2	Saturated biomarker summary sheets and mass chromatograms (GC-MSD)
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Appendix 4	Aromatic hydrocarbon summary sheets and mass chromatograms (GC-MSD)
Appendix 5	C ₅ -C ₂₀ whole oil gas chromatograms and tabulated concentrations (GC-FID)

The analytical and preparative methods employed in this study comprise Rock-Eval pyrolysis, solvent extraction followed by asphaltene precipitation and preparative group type separation by MPLC², analytical group type separation by TLC-FID³ (Iatroscan), gas chromatography (GC-FID) of saturated and aromatic hydrocarbons, analysis of biomarkers in the saturated and aromatic fractions by gas chromatography-mass spectrometry (GC-MSD⁴, oils from tests also GC-MRM1⁵). Stable carbon isotope analyses of EOM/oil fractions were run on selected samples, and whole oil gas chromatography of C₄-C₂₀ hydrocarbons was performed on oils from well tests. The analyses, except for the Iatroscan analyses of whole EOM from well 25/11-15 (chapters 2 and 5), were carried out in compliance with the Norwegian Industry Guide for Organic Geochemical Analyses (NIGOGA93). A reference sample (Oseberg oil) was included in each series of GC and GC-MS analyses in order to control and document the analytical quality.

Stable carbon isotope analysis of the oil/extract fractions was performed by Geolab Nor, Trondheim, Norway. All other analytical work and reporting was carried out at Norsk Hydro Research Center, Bergen, Norway.

² Medium Pressure/Performance Liquid Chromatography
³ Thin Layer Chromatography with Flame Ionisation Detection
⁴ Mass-Sensitive Detector
⁵ Metastable Reaction Monitoring

TABLES AND FIGURES (Chapter 1)

Table 1.1 List of analysed samples

Figure 1.1 Hermod / Balder area, discoveries and prospects (location map)

Figure 1.2 Key information for wells included in this study

Figure 1.3 CPI plot for well 25/11-18 T2

Table 1.1 List of analysed samples

Well Name	Top Depth	End Depth	Type	Lithology	Name	Rock-Eval	Rock-Eval (extr. rock)	Py-GC	Extr / Deasph	MPLC	Isotro-scan	GC SAT (FID)	GC-MS SAT (MSD)	GC-MS SAT (MRM1)	GC-MS ARO (MSD)	GC C5-C10 (FID)	C isotopes (fractions)
25/8-4	1744.5	1744.5	COCH	SST		1			1								
25/8-4	1745.9	1745.9	COCH	SST		1			1								
25/8-4	1749.8	1749.8	COCH	SST		1			1								
25/8-4	1777.5	1777.5	COCH	SST		1			1								
25/8-4	1780.8	1780.8	COCH	SST		1			1								
25/8-4	1781.6	1781.6	COCH	SST		1			1								
25/8-4	1782.6	1782.6	COCH	SST		1			1								
25/11-15	1733.55	1733.55	COCH	SST	4	1			1								
25/11-15	1734.55	1734.55	COCH	SST	4	1			1	1	1	1					1
25/11-15	1735.55	1735.55	COCH	SST	4	1			1								
25/11-15	1736.5	1736.5	COCH	SST	4	1			1								
25/11-15	1737.6	1737.6	COCH	SST	4	1			1	1	1	1					
25/11-15	1738.55	1738.55	COCH	SST	4	1			1								
25/11-15	1739.6	1739.6	COCH	SST	4	1			1	1	1	1					
25/11-15	1740.6	1740.6	COCH	SST	4	1			1								
25/11-15	1741.4	1741.4	COCH	SST	4	1			1	1	1	1					
25/11-15	1745.5	1745.5	COCH	SST	5	1			1								
25/11-15	1746.5	1746.5	COCH	SST	5	1			1								
25/11-15	1747.5	1747.5	COCH	SST	5	1			1	1	1	1					1
25/11-15	1748.5	1748.5	COCH	SST	5	1			1								
25/11-15	1749.5	1749.5	COCH	SST	5	1			1								
25/11-15	1750.45	1750.45	COCH	SST	5	1			1								
25/11-15	1751.5	1751.5	COCH	SST	5	1			1	1	1	1					
25/11-15	1752.5	1752.5	COCH	SST	5	1			1								
25/11-15	1753.55	1753.55	COCH	SST	5	1			1								
25/11-15	1754.5	1754.5	COCH	SST	5	1			1								
25/11-15	1755.5	1755.5	COCH	SST	5	1			1	1	1	1					
25/11-15	1756.5	1756.5	COCH	SST	5	1			1								
25/11-15	1757.5	1757.5	COCH	SST	5	1			1								
25/11-15	1758.5	1758.5	COCH	SST	5	1			1	1	1	1					
25/11-15	1759.5	1759.5	COCH	SST	5	1			1								
25/11-15	1760.5	1760.5	COCH	SST	5	1			1								
25/11-15	1761.5	1761.5	COCH	SST	5	1			1	1	1	1					1
25/11-15	1762.2	1762.2	COCH	SST	5	1			1								
25/11-15	1763.5	1763.5	COCH	SST	6	1			1								
25/11-15	1764.5	1764.5	COCH	SST	6	1			1	1	1	1					
25/11-15	1765.55	1765.55	COCH	SST	6	1			1								
25/11-15	1766.5	1766.5	COCH	SST	6	1			1								

Table 1.1 List of analysed samples (continued)

Well Name	Top Depth	End Depth	Type	Lithology	Name	Rock-Eval	Rock-Eval (extr. rock)	Py-GC	Extr / Deasph	MPLC	latro-scan	GC SAT (FID)	GC-MS SAT (MSD)	GC-MS SAT (MRM1)	GC-MS ARO (MSD)	GC C5-C10 (FID)	C Isotopes (fractions)
25/11-15	1767.5	1767.5	COCH	SST	6	1			1	1	1	1					
25/11-15	1768.5	1768.5	COCH	SST	6	1			1								
25/11-15	1769.5	1769.5	COCH	SST	6	1			1								
25/11-15	1770.45	1770.45	COCH	SST	6	1			1	1	1	1					1
25/11-15	1771.45	1771.45	COCH	SST	6	1			1								
25/11-15	1772.5	1772.5	COCH	SST	6	1			1								
25/11-15	1773.5	1773.5	COCH	SST	6	1			1	1	1	1					
25/11-15	1736	1774	OIL		DST # 1				1	1	1	1	1	1	1		1
25/11-15	1774.5	1774.5	COCH	SST	6	1			1								
25/11-15	1775.5	1775.5	COCH	SST	6	1			1	1	1	1					
25/11-15	1776.5	1776.5	COCH	SST	6	1			1								
25/11-15	1777.35	1777.35	COCH	SST	6	1			1	1	1	1					
25/11-15	1777.5	1777.5	COCH	SST	6	1			1								
25/11-15	1778.5	1778.5	COCH	SST	6	1			1	1	1	1					
25/11-15	1779.5	1779.5	COCH	SST	6	1			1								
25/11-15	1780.5	1780.5	COCH	SST	6	1			1	1	1	1					
25/11-15	1781.5	1781.5	COCH	SST	7	1			1								
25/11-15	1782.5	1782.5	COCH	SST	7	1			1								
25/11-15	1783.5	1783.5	COCH	SST	7	1			1	1	1	1					
25/11-15	1784.5	1784.5	COCH	SST	7	1			1								
25/11-15	1785.5	1785.5	COCH	SST	7	1			1	1	1	1					
25/11-15	1786.5	1786.5	COCH	SST	7	1			1	1	1	1					
25/11-15	1789.5	1789.5	COCH	ssf		1			1	1	1	1	1				1
25/11-15	1791.5	1791.5	COCH	ssf		1			1	1	1	1	1				
25/11-15	1795.7	1795.7	COCH	ssf		1			1	1	1	1	1				1
25/11-16	1764.6	1764.6	COCH	SST		1			1								
25/11-16	1765.4	1765.4	COCH	SST		1			1								
25/11-16	1766.5	1766.5	COCH	SST		1			1								
25/11-16	1767.4	1767.4	COCH	SST		1			1								
25/11-16	1768.35	1768.35	COCH	SST		1			1								
25/11-16	1769.8	1769.8	COCH	SST		1			1								
25/11-16	1770.7	1770.7	COCH	SST		1			1								
25/11-16	1771.5	1771.5	COCH	SST		1			1								
25/11-16	1772.5	1772.5	COCH	SST		1			1								
25/11-16	1773.5	1773.5	COCH	SST		1			1								
25/11-16	1774.5	1774.5	COCH	SST		1			1								
25/11-16	1775.5	1775.5	COCH	SST		1			1								
25/11-16	1776.5	1776.5	COCH	SST		1			1								

Well Name	Top Depth	End Depth	Type	Lithology	Name	Rock-Eval	Rock-Eval (extr. rock)	Py-GC	Extr / Deasph	MPLC	Intros-can	GC SAT (FID)	GC-MS SAT (MSD)	GC-MS SAT (MRM1)	GC-MS ARO (MSD)	GC C5-C10 (FID)	C Isotopes (fractions)
25/11-16	1778.5	1778.5	COCH	SST	6	1			1								
25/11-16	1779.5	1779.5	COCH	SST	6	1			1								
25/11-16	1780.5	1780.5	COCH	SST	6	1			1								
25/11-16	1781.5	1781.5	COCH	SST	6	1			1								
25/11-16	1782.5	1782.5	COCH	SST	6	1			1								
25/11-16	1783.5	1783.5	COCH	SST	6	1			1								
25/11-16	1784.5	1784.5	COCH	SST	6	1			1								
25/11-16	1788.9	1788.9	COCH	SST		1			1								
25/11-16	1789.6	1789.6	COCH	SST		1			1								
25/11-16	1796.6	1796.6	COCH	SST		1			1								
25/11-16	1797.6	1797.6	COCH	SST		1			1								
25/11-16	1798.9	1798.9	COCH	SST		1			1								
25/11-16	1799.6	1799.6	COCH	SST		1			1								
25/11-16	1800.6	1800.6	COCH	SST		1			1								
25/11-16	1801.6	1801.6	COCH	SST		1			1								
25/11-16	1802.6	1802.6	COCH	SST		1			1								
25/11-16	1803.6	1803.6	COCH	SST		1			1								
25/11-16	1804.6	1804.6	COCH	SST		1			1								
25/11-16	1805.6	1805.6	COCH	SST		1			1								
25/11-16	1806.9	1806.9	COCH	SST		1			1								
25/11-16	1807.6	1807.6	COCH	SST		1			1								
25/11-16	1808.5	1808.5	COCH	SST		1			1								
25/11-16	1808.55	1808.55	COCH	SST		1			1								
25/11-16	1809.6	1809.6	COCH	SST		1			1								
25/11-16	1810.6	1810.6	COCH	SST		1			1								
25/11-16	1811.6	1811.6	COCH	SST		1			1								
25/11-18	1721.6	1721.6	COCH	SST	4 CENTRE	1			1		1	1	1				1
25/11-18	1721.6	1721.6	COCH	SST/ADD	4 OUTER	1			1		1	1	1				1
25/11-18	1750	1750	COCH	SST	CORE # 6	1			1		1	1	1				1
25/11-18	1755	1755	COCH	SST	CORE # 7	1			1		1	1	1				1
25/11-18	1772.03	1772.03	COCH	SST	CORE # 9	1			1		1	1	1				1
25/11-18	1781.04	1781.04	COCH	SST	CORE #10	1			1		1	1	1				1
25/11-18	1790.04	1790.04	COCH	SST/ADD	CORE #11	1			1		1	1	1				1
25/11-18 T2	1606	1606	SWC	SST	26	1			1		1	1	1				1
25/11-18 T2	1732	1732	COCH	SST	15	1			1		1	1	1				1
25/11-18 T2	1742	1742	COCH	SST	16	1			1		1	1	1				1
25/11-18 T2	1755	1755	OIL		SRFT				1		1	1	1	1		1	1

TABLES AND FIGURES (Chapter 2)

- Table 2.2.1 Rock-Eval data for well 25/11-15
- Table 2.3.1 Extraction/deasphalting data (oil) for well 25/11-15
- Table 2.3.2 Extraction/deasphalting data (sediments) for well 25/11-15
- Table 2.3.3 Composition of deasphalted oil (Iatroscan), well 25/11-15
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- Table 2.4.1 Saturated fraction molecular ratios (oil sample), well 25/11-15
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- Table 2.7.1 Isotope analysis results (oil sample), well 25/11-15
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- Figure 2.2.1 Rock-Eval results vs. depth, well 25/11-15
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- Figure 2.4.1. Saturated hydrocarbon distribution profiles (concentrations relative to EOM, FID-SAT data), well 25/11-15
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- Figure 2.5.1 Saturated biomarker distribution profiles (concentrations relative to EOM, MSD-SAT data), well 25/11-15
- Figure 2.5.2 Saturated biomarker distribution profiles (normalised concentrations, MSD-SAT data), well 25/11-15



TABLE: 2.2.1

ROCK EVAL SCREENING DATA, WELL NOR:25/11-15

Depth (m)	Lithology	Type	Tmax DegC	S1 kg/t	S2 kg/t	TOC %	HI	PI	Analysing Company
1733.55	SST	COCH	419	26.6	9.6	3.4	279	0.73	NORSK HYDRO
1734.55	SST	COCH	414	24.0	7.7	3.1	246	0.76	NORSK HYDRO
1735.55	SST	COCH	414	24.1	8.2	3.2	260	0.75	NORSK HYDRO
1736.50	SST	COCH	413	23.9	7.2	3.2	229	0.77	NORSK HYDRO
1737.60	SST	COCH	416	28.4	9.7	3.7	260	0.75	NORSK HYDRO
1738.55	SST	COCH	414	23.0	8.0	3.1	259	0.74	NORSK HYDRO
1739.60	SST	COCH	414	30.0	10.4	4.0	263	0.74	NORSK HYDRO
1740.60	SST	COCH	415	22.7	7.0	3.0	234	0.76	NORSK HYDRO
1741.40	SST	COCH	417	29.2	11.2	4.0	284	0.72	NORSK HYDRO
1745.50	SST	COCH	421	34.4	14.4	4.6	313	0.71	NORSK HYDRO
1746.50	SST	COCH	421	33.6	12.9	4.4	291	0.72	NORSK HYDRO
1747.50	SST	COCH	420	32.8	15.7	4.7	336	0.68	NORSK HYDRO
1748.50	SST	COCH	419	37.3	15.6	5.1	304	0.70	NORSK HYDRO
1749.50	SST	COCH	419	38.1	18.1	5.3	343	0.68	NORSK HYDRO
1750.45	SST	COCH	420	40.7	17.9	5.5	325	0.69	NORSK HYDRO
1751.50	SST	COCH	419	44.4	20.5	6.1	334	0.68	NORSK HYDRO
1752.50	SST	COCH	417	37.3	14.9	5.0	301	0.71	NORSK HYDRO
1753.55	SST	COCH	421	37.0	15.6	5.0	312	0.70	NORSK HYDRO
1754.50	SST	COCH	418	33.0	13.3	4.4	299	0.71	NORSK HYDRO
1755.50	SST	COCH	419	38.0	16.3	5.2	313	0.70	NORSK HYDRO
1756.50	SST	COCH	418	36.7	14.9	4.9	303	0.71	NORSK HYDRO
1757.50	SST	COCH	417	36.1	14.6	4.8	304	0.71	NORSK HYDRO
1758.50	SST	COCH	422	33.2	13.6	4.4	305	0.71	NORSK HYDRO
1759.50	SST	COCH	418	28.3	10.8	3.8	286	0.72	NORSK HYDRO
1760.50	SST	COCH	417	36.3	15.3	4.9	312	0.70	NORSK HYDRO
1761.50	SST	COCH	421	31.1	14.5	4.5	322	0.68	NORSK HYDRO
1762.20	SST	COCH	418	23.1	8.8	3.2	279	0.72	NORSK HYDRO
1763.50	SST	COCH	415	22.5	7.0	3.0	232	0.76	NORSK HYDRO
1764.50	SST	COCH	420	26.0	9.6	3.5	273	0.73	NORSK HYDRO
1765.55	SST	COCH	420	21.4	7.4	2.9	252	0.74	NORSK HYDRO
1766.50	SST	COCH	417	21.8	7.6	3.0	255	0.74	NORSK HYDRO
1767.50	SST	COCH	420	38.0	15.6	5.1	306	0.71	NORSK HYDRO
1768.50	SST	COCH	419	34.5	14.0	4.6	304	0.71	NORSK HYDRO



TABLE: 2.2.1

ROCK EVAL SCREENING DATA, WELL NOR:25/11-15 (cont'd).

Depth (m)	Lithology	Type	Tmax DegC	S1 kg/t	S2 kg/t	TOC %	HI	PI	Analysing Company
1769.50	SST	COCH	418	28.9	10.0	3.8	264	0.74	NORSK HYDRO
1770.45	SST	COCH	423	37.9	17.4	5.2	335	0.69	NORSK HYDRO
1771.45	SST	COCH	417	21.8	7.5	2.9	256	0.74	NORSK HYDRO
1772.50	SST	COCH	415	26.1	8.8	3.5	254	0.75	NORSK HYDRO
1773.50	SST	COCH	416	31.2	11.4	4.2	273	0.73	NORSK HYDRO
1774.50	SST	COCH	417	27.6	10.4	3.7	277	0.73	NORSK HYDRO
1775.50	SST	COCH	416	33.3	12.8	4.4	288	0.72	NORSK HYDRO
1776.50	SST	COCH	418	28.3	9.9	3.8	264	0.74	NORSK HYDRO
1777.35	SST	COCH	421	30.8	11.8	4.1	284	0.72	NORSK HYDRO
1777.50	SST	COCH	418	25.5	9.1	3.4	265	0.74	NORSK HYDRO
1778.50	SST	COCH	416	29.7	10.9	4.0	272	0.73	NORSK HYDRO
1779.50	SST	COCH	418	27.1	9.9	3.6	273	0.73	NORSK HYDRO
1780.50	SST	COCH	418	27.6	10.5	3.7	282	0.72	NORSK HYDRO
1781.50	SST	COCH	417	20.8	7.1	2.8	249	0.75	NORSK HYDRO
1782.50	SST	COCH	421	34.0	13.7	4.5	307	0.71	NORSK HYDRO
1783.50	SST	COCH	416	30.1	11.2	4.0	280	0.73	NORSK HYDRO
1784.50	SST	COCH	417	17.7	5.8	2.4	237	0.76	NORSK HYDRO
1785.50	SST	COCH	416	16.3	5.3	2.3	237	0.75	NORSK HYDRO
1786.50	SST	COCH	420	0.1	0.1	0.3	28	0.59	NORSK HYDRO
1789.50	SST	COCH		0.1	0.0	0.0	0		NORSK HYDRO
1791.50	SST	COCH		0.1	0.0	0.0	0		NORSK HYDRO
1795.70	SST	COCH		0.1		0.0			NORSK HYDRO

TABLE: 2.3.1

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DEASPHALTING DATA (OILS), WELL NOR:25/11-15

St.Depth (m)	En.Depth (m)	Group/Fm.	Name	OIL (mg)	ASP (mg)	ASP (%)	Analysing Company
1736.00	1774.00		DST # 1			4.0	NORSK HYDRO



TABLE: 2.3.2

EXTRACTION/DEASPHALTING DATA (SEDIMENTS), WELL NOR:25/11-15

Depth (m)	Lithology	Type	Rock (g)	EOM (mg)	ASP (mg)	EOM (%)	ASP (%)	EOM (ppm)	TOC (%)	EOM/TOC (%)	Analysing Company
1733.55	SST	COCH	1.4	54.1		3.92	9.1	39200	3.4	1.1	NORSK HYD
1734.55	SST	COCH	1.5	49.8		3.39	10.4	33900	3.1	1.1	NORSK HYD
1735.55	SST	COCH	1.4	47.4		3.49	9.6	34900	3.2	1.1	NORSK HYD
1736.50	SST	COCH	1.3	45.2		3.37	10.1	33700	3.2	1.1	NORSK HYD
1737.60	SST	COCH	1.2	47.7		4.08	8.7	40800	3.7	1.1	NORSK HYD
1738.55	SST	COCH	1.4	46.6		3.33	10.3	33300	3.1	1.1	NORSK HYD
1739.60	SST	COCH	1.1	49.9		4.38	9.3	43800	4.0	1.1	NORSK HYD
1740.60	SST	COCH	1.4	45.7		3.26	8.4	32600	3.0	1.1	NORSK HYD
1741.40	SST	COCH	1.0	46.5		4.43	10.1	44300	4.0	1.1	NORSK HYD
1745.50	SST	COCH	1.0	54.8		5.22	9.2	52200	4.6	1.1	NORSK HYD
1746.50	SST	COCH	1.1	51.5		4.86	9.0	48600	4.4	1.1	NORSK HYD
1747.50	SST	COCH	1.1	63.1		5.74	9.2	57400	4.7	1.2	NORSK HYD
1748.50	SST	COCH	1.1	62.6		5.80	8.3	58000	5.1	1.1	NORSK HYD
1749.50	SST	COCH	1.0	61.4		6.14	8.5	61400	5.3	1.2	NORSK HYD
1750.45	SST	COCH	1.0	56.5		5.89	8.8	58900	5.5	1.1	NORSK HYD
1751.50	SST	COCH	0.8	49.8		6.47	7.6	64700	6.1	1.1	NORSK HYD
1752.50	SST	COCH	1.0	55.6		5.79	8.5	57900	5.0	1.2	NORSK HYD
1753.55	SST	COCH	1.0	54.1		5.30	7.7	53000	5.0	1.1	NORSK HYD
1754.50	SST	COCH	1.1	52.3		4.89	8.3	48900	4.4	1.1	NORSK HYD
1755.50	SST	COCH	0.9	55.5		5.97	8.0	59700	5.2	1.2	NORSK HYD
1756.50	SST	COCH	1.1	37.0		3.36	7.8	33600	4.9	0.7	NORSK HYD
1757.50	SST	COCH	1.0	53.3		5.28	8.5	52800	4.8	1.1	NORSK HYD
1758.50	SST	COCH	1.1	64.2		5.68	7.9	56800	4.4	1.3	NORSK HYD
1759.50	SST	COCH	1.3	53.5		4.25	8.2	42500	3.8	1.1	NORSK HYD
1760.50	SST	COCH	1.0	52.3		5.44	9.0	54400	4.9	1.1	NORSK HYD
1761.50	SST	COCH	1.0	59.0		5.67	10.2	56700	4.5	1.3	NORSK HYD
1762.20	SST	COCH	1.3	54.7		4.24	9.2	42400	3.2	1.3	NORSK HYD
1763.50	SST	COCH	1.4	55.7		4.00	8.2	40000	3.0	1.3	NORSK HYD
1764.50	SST	COCH	1.3	50.5		4.01	9.8	40100	3.5	1.1	NORSK HYD
1765.55	SST	COCH	1.5	61.0		3.93	8.4	39300	2.9	1.3	NORSK HYD
1766.50	SST	COCH	1.5	44.8		2.95	9.0	29500	3.0	1.0	NORSK HYD
1767.50	SST	COCH	0.9	48.1		5.23	8.1	52300	5.1	1.0	NORSK HYD
1768.50	SST	COCH	0.9	45.3		4.98	7.4	49800	4.6	1.1	NORSK HYD



TABLE: 2.3.2

EXTRACTION/DEASPHALTING DATA (SEDIMENTS), WELL NOR:25/11-15 (cont'd)

Depth (m)	Lithology	Type	Rock (g)	EOM (mg)	ASP (mg)	EOM (%)	ASP (%)	EOM (ppm)	TOC (%)	EOM/TOC (%)	Analysing Company
1769.50	SST	COCH	1.2	52.3		4.32	8.2	43200	3.8	1.1	NORSK HYD
1770.45	SST	COCH	0.9	48.7		5.24	7.4	52400	5.2	1.0	NORSK HYD
1771.45	SST	COCH	1.4	42.6		3.00	8.3	30000	2.9	1.0	NORSK HYD
1772.50	SST	COCH	1.3	48.4		3.67	8.3	36700	3.5	1.1	NORSK HYD
1773.50	SST	COCH	1.2	50.6		4.29	10.2	42900	4.2	1.0	NORSK HYD
1774.50	SST	COCH	1.3	53.8		4.23	9.4	42300	3.7	1.1	NORSK HYD
1775.50	SST	COCH	1.0	51.6		5.26	9.1	52600	4.4	1.2	NORSK HYD
1776.50	SST	COCH	1.2	47.2		3.86	8.7	38600	3.8	1.0	NORSK HYD
1777.35	SST	COCH	1.1	48.3		4.28	7.7	42800	4.1	1.0	NORSK HYD
1777.50	SST	COCH	1.3	48.2		3.76	8.8	37600	3.4	1.1	NORSK HYD
1778.50	SST	COCH	1.2	55.0		4.51	8.7	45100	4.0	1.1	NORSK HYD
1779.50	SST	COCH	1.4	57.0		4.16	8.1	41600	3.6	1.1	NORSK HYD
1780.50	SST	COCH	1.3	54.6		4.14	9.5	41400	3.7	1.1	NORSK HYD
1781.50	SST	COCH	1.5	46.3		3.01	10.3	30100	2.8	1.1	NORSK HYD
1782.50	SST	COCH	1.1	58.7		5.15	8.6	51500	4.5	1.2	NORSK HYD
1783.50	SST	COCH	1.2	54.5		4.39	10.8	43900	4.0	1.1	NORSK HYD
1784.50	SST	COCH	2.0	49.0		2.47	10.8	24700	2.4	1.0	NORSK HYD
1785.50	SST	COCH	2.2	52.5		2.41	10.7	24100	2.3	1.1	NORSK HYD
1786.50	SST	COCH	25.3	20.9		0.08	29.0	800	0.3	0.3	NORSK HYD
1789.50	SST	COCH	26.0	18.3	12.7	0.07	69.6	700			NORSK HYD
1791.50	SST	COCH	26.0	8.5	4.4	0.03	51.8	300			NORSK HYD
1795.70	SST	COCH	26.1	8.8	2.5	0.03	28.6	300			NORSK HYD

TABLE: 2.3.3

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HYDRO

COMPOSITION OF DEASPHALTED OIL (IATROSCAN), WELL NOR:25/11-15

(all values in %)

St.Depth (m)	En.Depth (m)	Name	Hydrocarbons				Non-HC TOTAL	TOTAL HC/Non-HC	Analysing Company
			SAT	ARO	TOTAL	SAT/ARO			
1736.00	1774.00	DST # 1	31.0	50.0	81.0	0.6	19.0	4.3	NORSK HYDRO

TABLE: 2.3.4

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HYDRO

COMPOSITION OF DEASPHALTED EXTRACT (IATROSCAN), WELL NOR:25/11-15

(all values in %)

Depth (m)	Lithology	Type	Hydrocarbons				Non-HC TOTAL	TOTAL HC/Non-HC	Analysing Company
			SAT	ARO	TOTAL	SAT/ARO			
1734.55	SST	COCH	24.0	14.0	38.0	1.7	62.0	0.6	NORSK HYDRO
1737.60	SST	COCH	24.0	16.0	40.0	1.5	60.0	0.7	NORSK HYDRO
1739.60	SST	COCH	22.0	16.0	38.0	1.4	62.0	0.6	NORSK HYDRO
1741.40	SST	COCH	25.0	20.0	45.0	1.3	55.0	0.8	NORSK HYDRO
1747.50	SST	COCH	21.0	19.0	40.0	1.1	60.0	0.7	NORSK HYDRO
1751.50	SST	COCH	25.0	20.0	45.0	1.3	55.0	0.8	NORSK HYDRO
1755.50	SST	COCH	26.0	24.0	50.0	1.1	50.0	1.0	NORSK HYDRO
1758.50	SST	COCH	25.0	20.0	45.0	1.3	55.0	0.8	NORSK HYDRO
1761.50	SST	COCH	21.0	16.0	37.0	1.3	63.0	0.6	NORSK HYDRO
1764.50	SST	COCH	21.0	18.0	39.0	1.2	61.0	0.6	NORSK HYDRO
1767.50	SST	COCH	23.0	18.0	41.0	1.3	59.0	0.7	NORSK HYDRO
1770.45	SST	COCH	19.0	19.0	38.0	1.0	62.0	0.6	NORSK HYDRO
1773.50	SST	COCH	23.0	18.0	41.0	1.3	59.0	0.7	NORSK HYDRO
1775.50	SST	COCH	21.0	17.0	38.0	1.2	62.0	0.6	NORSK HYDRO
1777.35	SST	COCH	22.0	19.0	41.0	1.2	59.0	0.7	NORSK HYDRO
1778.50	SST	COCH	22.0	17.0	39.0	1.3	61.0	0.6	NORSK HYDRO
1780.50	SST	COCH	26.0	18.0	44.0	1.4	56.0	0.8	NORSK HYDRO
1783.50	SST	COCH	23.0	17.0	40.0	1.4	60.0	0.7	NORSK HYDRO
1785.50	SST	COCH	23.0	17.0	40.0	1.4	60.0	0.7	NORSK HYDRO
1786.50	SST	COCH	20.0	14.0	34.0	1.4	66.0	0.5	NORSK HYDRO
1789.50	SST	COCH	10.0	7.0	17.0	1.4	83.0	0.2	NORSK HYDRO
1791.50	SST	COCH	5.0	3.0	8.0	1.7	92.0	0.1	NORSK HYDRO
1795.70	SST	COCH	5.0	2.0	7.0	2.5	93.0	0.1	NORSK HYDRO

TABLE: 2.4.1

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SATURATED FRACTION MOLECULAR RATIOS (OIL SAMPLES), WELL NOR:25/11-15

St.Depth (m)	En.Depth (m)	Name	Pristane/ nC17	Pristane/ Phytane	CPI-I	CPI-II	nC17/ nC17+nC27	Analysing Company
1736.00	1774.00	DST # 1	1.0	1.4	1.1	0.9		NORSK HYDRO

TABLE: 2.4.2

SATURATED FRACTION MOLECULAR RATIOS (SEDIMENT SAMPLES), WELL NOR:25/11-15

Depth (m)	Lithology	Type	Pristane/ nC17	Pristane/ Phytane	CPI-I	CPI-II	nC17/ nC17+nC27	Analysing Company
1734.55	SST	COCH	0.9	1.3		1.1		NORSK HYDRO
1737.60	SST	COCH	0.9	1.4		1.1		NORSK HYDRO
1739.60	SST	COCH	0.9	1.4		1.1		NORSK HYDRO
1741.40	SST	COCH	0.9	1.3		1.1		NORSK HYDRO
1747.50	SST	COCH	0.9	1.2		1.1		NORSK HYDRO
1751.50	SST	COCH	0.9	1.4		1.1		NORSK HYDRO
1755.50	SST	COCH	0.9	1.3		1.1		NORSK HYDRO
1758.50	SST	COCH	0.9	1.3		1.1		NORSK HYDRO
1761.50	SST	COCH	0.9	1.3		1.1		NORSK HYDRO
1764.50	SST	COCH	0.9	1.4		1.0		NORSK HYDRO
1767.50	SST	COCH	0.9	1.3		1.1		NORSK HYDRO
1770.45	SST	COCH	0.9	1.3		1.1		NORSK HYDRO
1773.50	SST	COCH	0.9	1.4		1.0		NORSK HYDRO
1775.50	SST	COCH	0.9	1.3		1.1		NORSK HYDRO
1777.35	SST	COCH	0.9	1.2		1.1		NORSK HYDRO
1778.50	SST	COCH	0.9	1.3		1.0		NORSK HYDRO
1780.50	SST	COCH	0.9	1.3		1.1		NORSK HYDRO
1783.50	SST	COCH	1.0	1.3		1.1		NORSK HYDRO
1785.50	SST	COCH	0.9	1.3		1.1		NORSK HYDRO
1786.50	SST	COCH	0.8	1.4		1.0		NORSK HYDRO

Low peak intensity prevented calculation of these parameters for the samples from below the OWC (1786.50, 1789.50, 1791.50 and 1795.70 m).

TABLE: 2.5.1

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HYDRO

SATURATED BIOMARKER RESULTS (SUMMARY), WELL NOR:25/11-15

Depth (m)	Lithology	Type	Name	Method Description	Data Type	Result Quality	Analysing Company
1734.55	SST	COCH	4	SIM on SAT fraction	amount	OK	NORSK HYDRO
1737.60	SST	COCH	4	SIM on SAT fraction	amount	OK	NORSK HYDRO
1739.60	SST	COCH	4	SIM on SAT fraction	amount	OK	NORSK HYDRO
1741.40	SST	COCH	4	SIM on SAT fraction	amount	OK	NORSK HYDRO
1747.50	SST	COCH	5	SIM on SAT fraction	amount	OK	NORSK HYDRO
1751.50	SST	COCH	5	SIM on SAT fraction	amount	OK	NORSK HYDRO
1755.50	SST	COCH	5	SIM on SAT fraction	amount	OK	NORSK HYDRO
1758.50	SST	COCH	5	SIM on SAT fraction	amount	OK	NORSK HYDRO
1761.50	SST	COCH	5	SIM on SAT fraction	amount	OK	NORSK HYDRO
1764.50	SST	COCH	6	SIM on SAT fraction	amount	OK	NORSK HYDRO
1767.50	SST	COCH	6	SIM on SAT fraction	amount	OK	NORSK HYDRO
1770.45	SST	COCH	6	SIM on SAT fraction	amount	OK	NORSK HYDRO
1773.50	SST	COCH	6	SIM on SAT fraction	amount	OK	NORSK HYDRO
1774.00		OIL	DST # 1	SIM on SAT fraction	amount	OK	NORSK HYDRO
1775.50	SST	COCH	6	SIM on SAT fraction	amount	OK	NORSK HYDRO
1777.35	SST	COCH	6	SIM on SAT fraction	amount	OK	NORSK HYDRO
1778.50	SST	COCH	6	SIM on SAT fraction	amount	OK	NORSK HYDRO
1780.50	SST	COCH	6	SIM on SAT fraction	amount	OK	NORSK HYDRO
1783.50	SST	COCH	7	SIM on SAT fraction	amount	OK	NORSK HYDRO
1785.50	SST	COCH	7	SIM on SAT fraction	amount	OK	NORSK HYDRO
1786.50	SST	COCH	7	SIM on SAT fraction	amount	OK	NORSK HYDRO
1789.50	SST	COCH		SIM on SAT fraction	amount	OK	NORSK HYDRO
1791.50	SST	COCH		SIM on SAT fraction	amount	WEAK	NORSK HYDRO
1795.70	SST	COCH		SIM on SAT fraction	amount	WEAK	NORSK HYDRO